

# MINUTE MAN<sup>®</sup>

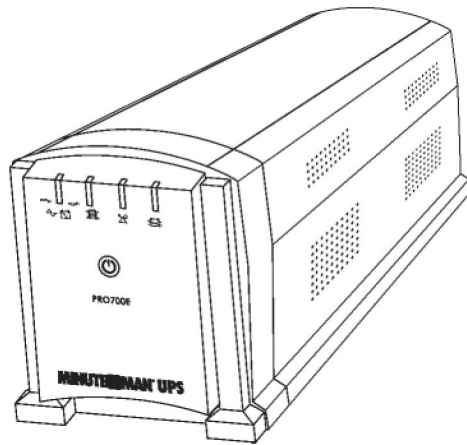
UNINTERRUPTIBLE POWER SUPPLIES

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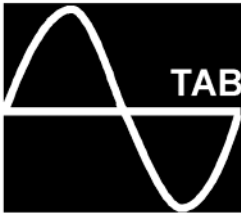
## PRO-E SERIES

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### User's Manual



1-866-207-6631 | [www.rackmountsolutions.net](http://www.rackmountsolutions.net)  
sales@rackmountsolutions.net



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Thank you for purchasing a MINUTEMAN power protection product. It has been designed and manufactured to provide many years of trouble free service.

**IMPORTANT SAFETY INSTRUCTIONS  
SAVE THESE INSTRUCTIONS !**

Please read this manual before installing your PRO-E Series UPS, models PRO500E, PRO700E, PRO1100E, PRO1500E, PRO500iE, PRO700iE, PRO1100iE, PRO1500iE, as it provides important information that should be followed during installation and maintenance of the UPS and batteries allowing you to correctly set up your system for the maximum safety and performance. Included is information on customer support and factory service if it is required. If you experience a problem with the UPS please refer to the Troubleshooting guide in this manual to correct the problem or collect enough information so that the MINUTEMAN Technical Support Department can rapidly assist you.



This symbol indicates "ATTENTION"



This symbol indicates "Risk of Electrical Shock"



This symbol indicates "Alternating Current Supply Phase"



This symbol indicates "Alternating Current Supply"



This symbol indicates "Direct Current Supply"



This symbol indicates "Equipment Grounding Conductor"



**CAUTION!** To reduce the risk of electrical shock with the installation of this UPS equipment and the connected equipment, the user must ensure that the combined sum of the AC leakage current does not exceed 3.5mA.



**CAUTION!** Connect the UPS to a two pole, three wire grounding AC wall outlet. The receptacle must be connected to the appropriate branch protection (circuit breaker or fuse). Connection to any other type of receptacle may result in a shock hazard and violate local electrical codes.



**CAUTION!** To reduce the risk of electrical shock in conditions where the load equipment grounding cannot be verified, disconnect the UPS from the AC wall outlet before installing a computer interface cable. Reconnect the power cord only after all signaling connections are made.



**WARNING:** Risk of Electrical Shock. Hazardous live parts inside these power supplies are energized from the battery even when the AC input is disconnected.

To de-energize the outputs of the UPS:

1. If the UPS is on press and release the On/Off/Test button.
2. Disconnect the UPS from the AC wall outlet.
3. To de-energize the UPS completely, disconnect the battery.

This Uninterruptible Power Supply (UPS) contains potentially hazardous voltages. DO NOT attempt to disassemble the UPS. This UPS contains no user serviceable parts. Repairs and battery replacement must be performed by **AUTHORIZED SERVICE PERSONNEL ONLY.**



**NOTICE:** This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules and the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference of the Canadian Department of Communications. These limits are designed to provide reasonable protection against such interference in a residential installation. This equipment generates and uses radio frequency and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, this equipment may cause interference to radio and television reception. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that the computer and receiver are on different branch circuits.
- Shielded communications interface cables must be used with this product.



**WARNING:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## Receiving Inspection

After removing your MINUTEMAN UPS from its carton, it should be inspected for damage that may have occurred in shipping. Immediately notify the carrier and place of purchase if any damage is found. Warranty claims for damage caused by the carrier will not be honored. The packing materials that your UPS was shipped in are carefully designed to minimize any shipping damage. In the unlikely case that the UPS needs to be returned to MINUTEMAN, please use the original packing material. Since MINUTEMAN is not responsible for shipping damage incurred when the system is returned, the original packing material is inexpensive insurance. **PLEASE SAVE THE PACKING MATERIALS!**

## Para Systems Life Support Policy

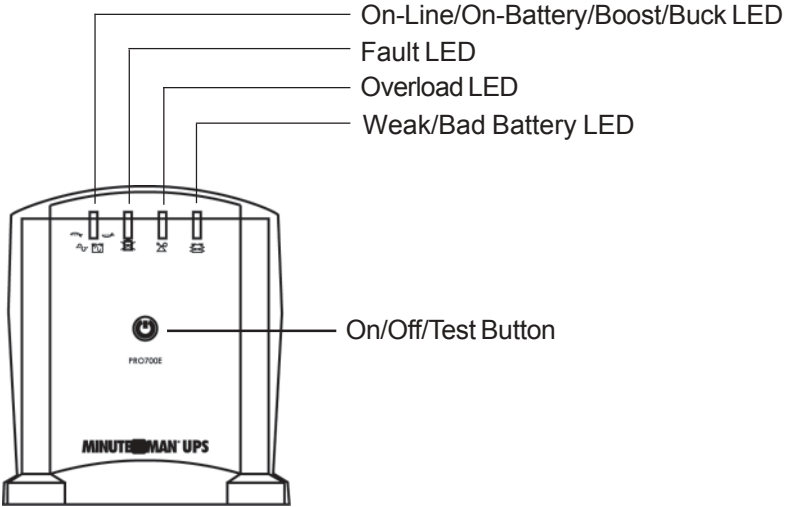
As a general policy, Para Systems Inc. (Para Systems) does not recommend the use of any of its products in life support applications where failure or malfunction of the Para Systems product can be reasonably expected to cause failure of the life support device or to significantly affect its safety or effectiveness. Para Systems does not recommend the use of any of its products in direct patient care. Para Systems will not knowingly sell its products for use in such applications unless it receives in writing assurances satisfactory to Para Systems that (a) the risks of injury or damage have been minimized, (b) the customer assumes all such risks, and (c) the liability of Para Systems Inc. is adequately protected under the circumstances.

Examples of devices considered to be life support devices are neonatal oxygen analyzers, nerve stimulators (whether used for anesthesia, pain relief, or other purposes), auto transfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, neonatal ventilator incubators, ventilators for both adults and infants, anesthesia ventilators, and infusion pumps as well as any other devices designated as “critical” by the United States FDA.

Hospital grade wiring devices and leakage current may be ordered as options on many PARA SYSTEMS UPS systems. PARA SYSTEMS does not claim that units with this modification are certified or listed as Hospital Grade by PARA SYSTEMS or any other organization. Therefore, these units do not meet the requirements for use in direct patient care.

# CONTROLS AND INDICATORS

## 2



Press and release the ON/OFF/Test Button after 1 beep to turn the UPS ON or OFF (see section 4).



On-Line



On-Battery



Buck



Boost

The On-Line/On-Battery/Boost and Buck (green) LED illuminates in a steady state when the UPS is on and supplying AC power to the load. The LED blinks and the audible alarm sounds, when supplying battery power to the load. The LED blinks and no audible alarm when the UPS is in either the boost or the buck mode.



The Fault (red) LED illuminates when the UPS has detected an internal fault. (see section 5)



The Overload (yellow) LED illuminates when the loads connected to the UPS exceeds the UPS power rating. (see section 5)

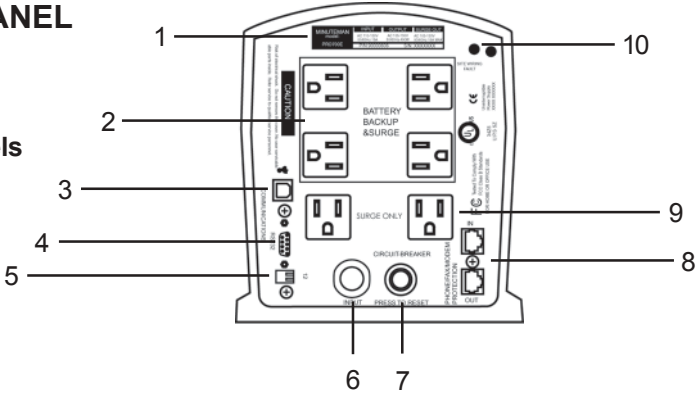


The Weak/Bad Battery (red) LED illuminates when the UPS has detected that the batteries are Weak/Bad. Battery replacement might be required. (see section 5)

**REAR PANEL**

English

**120V Models**



1. The Information/Rating Label.
2. The Battery Backup and Surge output power receptacles are NEMA 5-15R type (IEC 320 C13 sockets for 230V models).
3. The USB Communications Interface Port is for UPS monitoring and control.
4. The RS232 Communications Interface Port is for UPS monitoring and control.
5. The Dipswitches are for setting the Inverter output voltage.
6. The input power cord has a NEMA 5-15P Plug (IEC 320 C14 socket for 230V models).
7. The input circuit breaker will trip in the event the load exceeds the UPS's power rating.
8. The RJ11/RJ45 modular connectors are used for 10 Base-T Network/Fax/Modem protection.

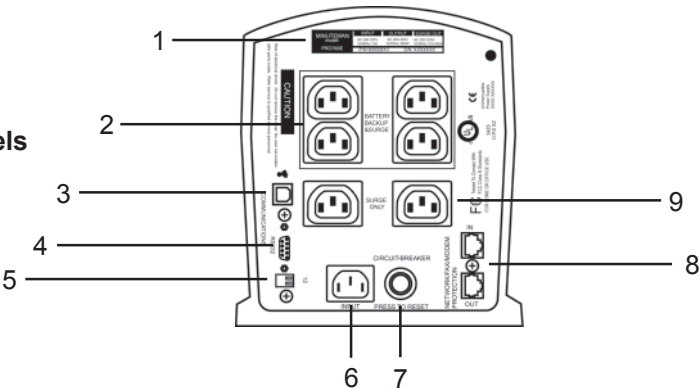
**WARNING: The 230V models are NETWORK PROTECTION ONLY.**

9. The Surge ONLY output power receptacles are NEMA 5-15R type (IEC 320 C13 sockets for 230V models).

**NOTE:** The Surge ONLY output power receptacles are only on the following models: PRO500E, PRO700E, PRO500iE, PRO700iE.

10. The Site Wiring Fault (SWF) LED illuminates when the UPS detects an improperly wired AC wall outlet (120V models only).

**230V Models**





# INSTALLATION

## 3

## INSTALLATION PLACEMENT



The PRO-E series is intended to be installed in a temperature controlled environment that is free of conductive contaminants. Select a location which will provide good air circulation for the UPS at all times. Avoid locations near heating devices, water or excessive humidity, or where the UPS is exposed to direct sunlight. Route power cords so they cannot be walked on or damaged.

Operating Temperature (Maximum): 0 to 40 degrees C (+32 to 104 degrees F)

Operating Elevation: 0 to 3,000m (0 to 10,000 ft)

Operating and Storage Relative Humidity: 95%, non-condensing

Storage Temperature: -15 to +45 degrees C (+5 to +113 degrees F)

Storage Elevation: 0 to 15,000m (0 to +50,000 ft)

## INSTALLATION

Be sure to read the installation placement and all the cautions before installing the UPS. Place the UPS in the final desired location and complete the rest of the installation procedure. **USE CAUTION:** The UPS is heavy. Use the appropriate number of personnel when installing the UPS.

## CONNECTING YOUR EQUIPMENT

Plug the equipment into the output receptacles on the rear panel of the UPS. Do not use extension cords, adapter plugs, power strips or surge strips on the output of the UPS. Ensure that you do not exceed the maximum output rating of the UPS (refer to the UPS's back panel or the Electrical Specifications in this manual).

**CAUTION!** DO NOT connect a laser printer to the output receptacles on the UPS, unless the UPS is rated 2000VA or greater. A laser printer draws significantly more power when printing than at idle and may overload the UPS.





**WARNING!** **DO NOT** plug Power Strips or Surge Protection Devices into the "Battery Backup" Receptacles on the UPS. Plugging Power Strips or Surge Protection Devices into the "Battery Backup" Receptacles may cause internal damage to the UPS, the Power Strip, or the Surge Protection Device.



### CONNECTING THE UPS TO AN AC SOURCE

Plug the UPS into a two pole, three wire, grounded receptacle only. Do not use extension cords, adapter plugs, power strips or surge strips.

### CHECKING THE SITE WIRING FAULT

After plugging in the UPS, check the Site Wiring Fault (SWF) LED on the rear panel of the UPS. If the SWF LED is illuminated, the UPS is plugged into an improperly wired AC outlet.



**CAUTION!** If the UPS indicates a Site Wiring Fault (SWF), have a Qualified Electrician correct the problem.

### CHARGING THE BATTERY

The PRO-E Series UPS will charge the internal batteries whenever the UPS is connected to an AC source. It is recommended that the UPS's batteries be charged for a minimum of 4 hours before use. The UPS may be used immediately, however, the "ON Battery" runtime may be less than normally expected.

**NOTE:** If the UPS is going to be out of service or stored for a prolonged period of time, the batteries must be recharged for at least twenty-four hours every ninety days.

### COMMUNICATIONS PORT CONNECTION (OPTIONAL)

MINUTEMAN Power Monitoring Software and interface cables kits can be used with the PRO-E Series UPS. Use only MINUTEMAN or MINUTEMAN approved interface cables with these UPSs. Connect the interface cable (Serial or USB) to the appropriate communications port on the rear panel of the UPS. Connect the other end of the cable to the device that will be monitoring/controlling the UPS.

**NOTE:** Connecting to the Communications Port is optional. The UPS works properly without a connection.

### NETWORK/FAX/MODEM PROTECTION CONNECTION (OPTIONAL)

Connect a 10 Base-T network, Fax or Modem line to the RJ11/45 protection sockets on the rear panel of the UPS. This connection will require another length of telephone or network cable. The cable coming from the telephone service or networked system is connected to the port marked "IN". The equipment to be protected is connected to the port marked "OUT".

**NOTE:** Connecting to the Network/Fax/Modem protection socket connection is optional. The UPS works properly without a connection.

**WARNING:** The RJ45 protection sockets for the 230V models are **NETWORK PROTECTION ONLY**. Connecting a Fax/Modem/Phone line is **PROHIBITED**.



## TURNING THE UNIT ON/OFF

ON / OFF / Test Button



Press and release the ON/OFF/Test Button after one beep to turn the UPS ON and supply power to the load. The load is immediately powered while the UPS runs a two-second self test. Press and release the ON/OFF/Test Button after one beep to turn the UPS OFF. The UPS will continue to charge the batteries whenever it is plugged into an AC outlet and there is AC present.

### SELF TEST

The self test feature is useful to verify the correct operation of the UPS and the condition of the batteries. With the UPS in the normal On-Line mode, press and hold the ON/OFF/Test Button for approximately 4 seconds (four beeps), then release the button. The UPS will perform a ten-second self test. During the self test, the UPS will switch to battery power and the On-Line LED will blink and the audible alarm will sound. The length of the test that is automatically performed every two weeks is longer than the start-up or user invoked test. This test will run for approximately fifteen-seconds to measure the battery's capability to provide an acceptable amount of runtime. If the UPS fails a self test, one of the LEDs will remain illuminated indicating the type of problem.

**Note:** The UPS will automatically perform a self test on start-up and every two weeks.

### DIP SWITCH SETTINGS

The DIP Switch setting may be changed by the user to set the desired Inverter (on battery) output voltage. The DIP Switch must be set to the desired Inverter output voltage and then the UPS must be turned OFF and restarted to reconfigure the microprocessor and save the changes. The Inverter (on battery) output voltage setting for the 120V models can be either 120VAC (default) or 127VAC. Changing the Inverter output voltage to 127VAC, will also change the Buck setpoint from 130VAC (default) to 136VAC. The Inverter (on battery) output voltage setting for the 230V models can be either 230VAC (default) or 208VAC. Changing the Inverter output voltage to 208VAC, will also change the Boost1 setpoint from 206VAC (default) to 198VAC.

Inverter output voltage

Switch	1	2
120V (230V)	↑	↑
127V (208V)	↓	↑

## ALARMS

### ON BATTERY

When the UPS is operating on the batteries, the On-Battery LED will blink and the audible alarm will sound once every 10-seconds. The alarm will stop once the UPS returns to the On-Line operation.

### LOW BATTERY WARNING

The UPS will sound two beeps every five-seconds when the battery reserve runs low. This condition will continue until AC returns or the UPS shuts down from battery exhaustion.

### WEAK/BAD BATTERY

The UPS automatically tests the battery's condition and will illuminate the Weak/Bad Battery LED and sound the alarm. This alarm will be repeated until the batteries pass a self test. If the battery is bad or disconnected, the Weak/Bad Battery LED will illuminate and the alarm will beep three times every five-minutes until the battery is reconnected or replaced. If the battery is weak, the Weak/Bad Battery LED will illuminate and the alarm will beep one time every ten-minutes until the battery is recharged or replaced. It is recommended that the UPS be allowed to charge overnight before performing a battery test to confirm a Weak/Bad Battery condition.

**NOTE:** If the UPS has a Weak/Bad Battery Alarm after reconnecting or replacing the batteries, the user must initiate a self test to clear the Weak/Bad Battery Alarm. To initiate a self test see section 4 "**SELF TEST**".

### OVERLOAD

When the amount of load attached to the UPS exceeds its power rating, the Overload LED will illuminate and the UPS will sound a constant alarm. This alarm will remain on until the excess load is removed or the UPS's self protection circuit shuts the UPS down.

### UPS FAULT

When the UPS detects a hardware fault, the Fault LED will illuminate and the UPS will sound a constant alarm. The fault condition, in some instances, may be reset by turning the UPS OFF and then ON. (see section 5 Troubleshooting)

### FAN LOCK

AC Mode: If the fan becomes locked, the alarm will beep one time every two-seconds until the fan is unlocked.

Battery Mode: If the fan becomes locked, the alarm will beep one time every two-seconds for thirty-seconds, then the output will turn off, the alarm will sound continuously and the Fault LED will illuminate. The UPS must be turned off and the fan unlocked to clear the Fan lock Alarm.

## COMMUNICATIONS PORTS (RS232 and USB)

The RS232 communication port is a standard DB9 female with both RS232 and simulated contact closure capability. The PRO-E series UPS will poll the port and activate the port for RS232 or contact closure in accordance with the type of cable it finds connected to the port. To change the port configuration requires the unit be turned off and restarted with the desired cable connected. The pinout for the port is depicted per the chart below.

Pin 1: EPO Emergency Power Off (pull and hold this pin low to turn off the UPS, release this pin from low to turn to restart the UPS)

Pin 2: /TXD

Pin 3: /RXD and receive ups shutdown command

Pin 4: Simulated contact closure AC fail, NO

Pin 5: Ground

Pin 6: Simulated contact closure low battery warning, NO

Pin 7: Simulated contact closure AC fail, NC

Pin 8: AC fail signal (high to low signal)

Pin 9: Not Used

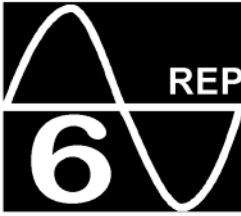
**NOTE:** See the SentryII CD for the Power Monitoring Software installation. See the USB Driver CD for the USB installation.

# TROUBLESHOOTING

## 5

English

Symptom	Possible Cause	What To Do
UPS will not turn on	On/Off/Test button not pushed	Press and release the On/Off/Test button to start UPS
UPS operates in battery mode only, even though there is normal AC present	Input AC circuit breaker is tripped	Reset circuit breaker by pressing the plunger back in. If the AC circuit breaker trips after UPS starts up, reduce the load on the UPS
Fault LED is illuminated	UPS has detected an internal fault	Call for service
Site Wiring Fault LED is illuminated	Incorrect service wiring	Have a Qualified Electrician correct the service wiring
The On-line/On-Battery LED is illuminated, but there is no output	The UPS is being controlled via its communications port	Disconnect the computer cable from the UPS and press the On button. If UPS works normally, the software has control of the UPS
UPS does not provide expected runtime	The batteries may be weak or at the end of useful service life	Charge the batteries for 8 hours and retest. If the runtime is still less than expected, the batteries may need to be replaced, even though the Weak/Bad Battery LED is not illuminated
Weak/Bad Battery LED is illuminated	Weak/bad batteries or bad connections at the battery	Check battery connections, charge the batteries for 8 hours, replace the batteries
UPS occasionally emits a beep	Normal operation	The UPS is performing its intended function
Overload LED is illuminated and a constant alarm	The load has exceeded the UPS's capacity	Check the specifications (see section 8). Remove part of the load
The On-Line LED is blinking and the audible alarm is silent	The UPS is in either the Boost mode or the Buck mode	The UPS is performing its intended function



## REPLACING THE BATTERY

### REPLACING THE BATTERY

(AUTHORIZED SERVICE PERSONNEL ONLY)

The PRO-E Series UPS has an easy to replace hot-swappable batteries. Please read all of the **WARNINGS** and **CAUTIONS** before attempting to service the batteries.

**NOTE:** If there is a power interruption while replacing the hot-swappable batteries, with the UPS on, the load will not be backed up.

**WARNING!** This Uninterruptible Power Supply contains potentially hazardous voltages. Do not attempt to disassemble the UPS beyond battery replacement procedures below. This UPS contains no user serviceable parts. Repairs and Battery replacement must be performed by **AUTHORIZED SERVICE PERSONNEL ONLY.**



**CAUTION:** Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes and may be toxic.

**CAUTION:** Do not dispose of batteries in a fire. The batteries may explode. The batteries in this UPS are recyclable. Dispose of the batteries properly. The batteries contain lead and pose a hazard to the environment and human health if not disposed of properly. Refer to local codes for proper disposal requirements or return the battery to MINUTEMAN.



**CAUTION:** Although battery system voltages are only 12VDC, 24VDC, and 36VDC the battery system can still present a risk of electrical shock. The current capability of a battery is sufficient to burn wire or tools very rapidly, producing molten metal. Observe these precautions when replacing the batteries:



1. Remove watches, rings, or other metal objects.
2. Use hand tools with insulated handles.
3. Wear protective eye gear (goggles), rubber gloves and boots.
4. Do not lay tools or other metal parts on top of batteries.
5. Disconnect the charging source prior to connecting or disconnecting the battery terminals.
6. Determine if the battery is inadvertently grounded. If the battery is, remove the source of the grounding. Contact with any part of a grounded battery can result in an electrical shock. The likelihood of such shock will be reduced, if such grounds are removed during installation and maintenance.

**CAUTION:** Replace batteries with the same number and type as originally installed in the UPS. These batteries have pressure operated vents. These UPSs contain sealed non-spillable lead acid batteries.

PRO-E Model #	PRO500E PRO500iE	PRO700E PRO700iE	PRO1100E PRO1100iE	PRO1500E PRO1500iE
Battery Model #	1-12V9Ah	2-12V7Ah	3-12V7Ah	3-12V9Ah
Panasonic Part #	LC-R129	LC-R127	LC-R127	LC-R129
Yuasa Part #	REW45-12	NP 7-12	NP 7-12	REW45-12

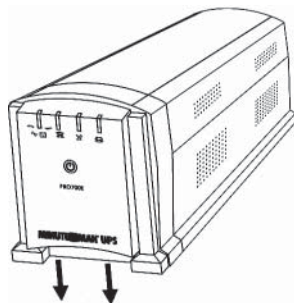
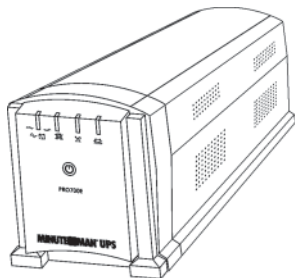
## BATTERY REPLACEMENT PROCEDURE

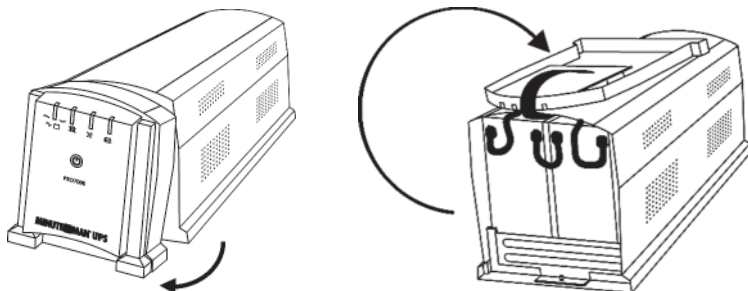
### PLEASE READ THE CAUTIONS AND WARNINGS BEFORE ATTEMPTING TO REPLACE THE BATTERIES

Hot-swappable batteries mean that the batteries can be replaced without powering down the whole UPS system.

**NOTE:** If there is a power interruption while replacing the hot-swappable batteries, with the UPS on, the load will not be backed up. To hot-swap the batteries start with step number 6.

1. Turn off the equipment that is plugged into the output receptacles of the UPS.
2. Press and release the On/Off/Test button on the front panel to turn the UPS OFF.
3. Unplug the UPS's AC power cord from the AC wall outlet.
4. Unplug the equipment from the output receptacles of the UPS.
5. Unplug the computer interface cable from the rear panel of the UPS.
6. Remove the retaining screws from the bottom of the front panel of the UPS.
7. Grasp the bottom of the front panel and gently pull the front panel off the UPS.
8. Lay the front panel on top of the UPS.



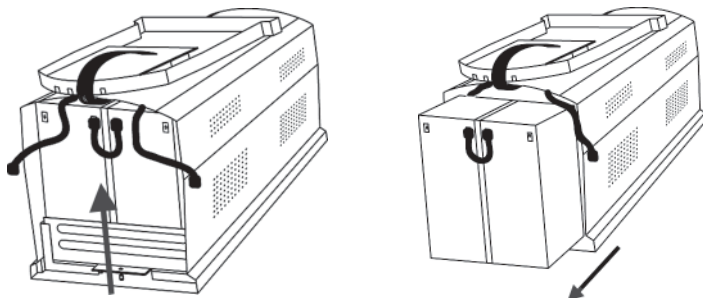


9. Disconnect the positive (red) wire from the battery positive terminal.
10. Disconnect the battery negative (black) wire from the battery negative terminal.

**NOTE:** Use CAUTION, do not touch the battery positive wire to the battery negative wire.

11. Remove the battery bracket retaining screw and slide the battery bracket upwards.
12. Using the pull tab, pull the batteries out completely. DO NOT pull the batteries out by pulling the battery jumper wires.
13. Remove the battery jumper wires.
14. Verify proper polarity. Re-install the battery jumper wires on the new batteries.
15. Slide the new batteries into the battery compartment.
16. Re-install the battery bracket and the battery bracket retaining screw.
17. Verify proper polarity. Reconnect the battery negative (black) wire to the battery negative terminal.
18. Verify proper polarity. Reconnect the battery positive (red) wire to the battery positive terminal. Some sparking may occur, this is normal.
19. Re-install the front panel of the UPS.
20. Re-install the retaining screws for the front panel of the UPS.
21. Dispose of the old batteries properly at an appropriate recycling facility or return them to the supplier in the packing material for the new batteries.
22. The UPS is now ready for the normal start-up operation.

**NOTE:** If the UPS has a Weak/Bad Battery Alarm after replacing the batteries, the user must initiate a self test to clear the Weak/Bad Battery Alarm. To initiate a self test see section 4 "SELF TEST".







## OBTAINING SERVICE

English

### IF THE UPS REQUIRES SERVICE

1. Use the **TROUBLESHOOTING** section to eliminate obvious causes.
2. Verify there are no circuit breakers tripped. A tripped circuit breaker is the most common problem.
3. Call your dealer for assistance. If you cannot reach your dealer, or if they cannot resolve the problem call or fax MINUTEMAN Technical Support at the following numbers; Voice phone (972) 446-7363, FAX line (972) 446-9011 or visit our Web site at [www.minutemanups.com](http://www.minutemanups.com) the "Discussion Board". Please have the following information available BEFORE calling the Technical Support Department.
  - A. Your name and address.
  - B. Where and when the unit was purchased.
  - C. All of the model information on the rear panel of your UPS.
  - D. Any information on the failure, including LEDs that may be illuminated.
  - E. A description of the protected equipment, including model numbers if possible.
  - F. A technician will ask you for the above information and, if possible, help solve your problem over the phone. In the event that the unit requires factory service, the technician will issue you a Return Material Authorization Number (RMA #).
  - G. If the UPS is under warranty, the repairs will be done at no charge. If not, there will be a charge for repair.
4. Pack the UPS in its original packaging. If the original packaging is no longer available, ask the Technical Support Technician about obtaining a new set. It is important to pack the UPS properly in order to avoid damage in transit. Never use Styrofoam beads for a packing material.
  - A. Include a letter with your name, address, day time phone number, RMA number, a copy of your original sales receipt, and a brief description of the problem.
5. Mark the RMA # on the outside of all packages. The factory cannot accept any package without the RMA # marked on the outside.
6. Return the UPS by insured, prepaid carrier to:

Para Systems Inc.  
MINUTEMAN UPS  
1455 LeMay Drive  
Carrollton, TX 75007  
ATTN: RMA # \_\_\_\_\_



# SPECIFICATIONS

## 8

MODEL NUMBER (230V Models)	PRO500E (PRO500IE)	PRO700E (PRO700IE)	PRO1100E (PRO1100IE)	PRO1500E (PRO1500IE)
Acceptable Input voltage	0 - 165VAC (0 - 290VAC)			
Input voltage (AC Mode)	75 - 145VAC (150 - 280VAC)			
Output voltage (AC Mode)	120VAC: 105-130VAC (230VAC: 206-250VAC)			
Nominal input frequency	50 or 60 Hz, autosensing			
Input protection	Resettable circuit breaker			
Frequency limits (AC Mode)	50 or 60 Hz, +/-6Hz			
Transfer time	2-6 mS typical			
Maximum load	500VA 350W	700VA 490W	1100VA 770W	1500VA 1050W
On-battery output voltage	Default 120V (230V) / User selectable at 120/127V, (208/230V)			
On-battery frequency	50/60 Hz, +/- .5 Hz, unless synchronized to utility			
On-battery waveshape	Simulated Sine Wave			
Protection	Over current, short circuit protected and latching shutdown			
Surge energy rating (one time, 10/1000 uS waveform)	500 J (440 J)			
Surge current capability (one time, 8/20 uS waveform)	6500 Amps total			
Surge response time	0 ns (instantaneous) normal mode; <5 ns common mode			
Surge voltage let-through (as a percentage of an applied ANSI C62.41 Cat. A +/-6 kV)	<5%			
Noise filter	Normal and common mode EMI/RFI suppression			
Battery type: Sealed, non-spillable, maintenance free, lead-acid	1-12V9Ah	2-12V7Ah	3-12V7Ah	3-12V9Ah
Typical battery life	3-5 years, depending on discharge cycles and ambient temp			
Typical recharge time	8 hours from total discharge			
10 Base-T surge protection let-through (as a percentage of an applied +/-6 kV 1.2/50 us, 500 a 8/20 uS test)	<5%			
Telephone line surge protection let-through (as a percentage of an applied +/-6 kV 1.2/50 us, 500a 8/20 uS test)	<1%			
Runtime: Half Load	15-Minutes	17-Minutes	16-Minutes	14-Minutes
Runtime: Full Load	4-Minutes	5-Minutes	5-Minutes	4.5-Minutes
Electromagnetic immunity	IEC 801-2 level IV, 801-4 level IV, 801 -5 level III			
Audible noise at 1 m (3 ft.)	<45 dBA			
Size - Net H X D X W	7.56 x 12.56 x 6.38" 192 x 319 x 162 mm		8.03 x 16.18 x 6.38" 204 x 411 x 162 mm	
Size - Shipping H X D X W	13 x 18.9 x 11.4" 330 x 480 x 290 mm		13 x 22.8 x 12.6" 330 x 580 x 320 mm	
Weight - Net (Shipping)	20.3 (23)lb 9.2 (10.4)Kg	27.33 (30)lb 12.4 (13.6)Kg	39.24 (43)lb 17.8 (19.5)Kg	42.33 (47)lb 19.2 (20.9)Kg
Safety and approvals	UL1778, cUL (CSA 22.1), TUV; 230V models			
EMC Verification	FCC Class B, CE certified			

# CONFIGURABLE PARAMETERS AND SETTINGS

## 9

(These items may require optional software or hardware)

Function	Factory Default	User Choices	Description
UPS ID	PRO-E	Up to 64 characters to define the UPS	Use this function to uniquely identify the UPS in your network configuration
Battery install date	Date of manufacture	Date of battery replacement - month/day/year XXXXXXXX	Enter the current date when replacing batteries
Battery life in days	1826	Up to 5 characters	At first battery replacement, reset to reflect actual number of days experience in your environment or leave factory default
Enable/Disable auto restart	Enabled	Enable or Disable	When enabled, the UPS will automatically restart from a low battery shutdown when normal AC returns
Set audible alarm state	Enabled	Enabled, at low battery, disabled	Enabled - the UPS will emit a short beep when in the battery mode. At Low Battery the UPS will emit two beeps from low battery warning until shutdown. Disabled - Use only when software is controlling the UPS or to silence the alarm
Shutdown Type	UPS output	UPS output or UPS	UPS Output - When the UPS is told to shut down, it turns off the UPS output only. UPS - Turns off the UPS which requires the UPS to be turned on manually
Set inverter output voltage	120VAC (230VAC)	120, 127VAC (230, 208VAC)	Changes output voltage during battery mode operations
Enable/Disable EPO	Disabled	Enable or Disable	Enabled - the UPS will be completely powered OFF and remain OFF until EPO is disabled



## LIMITED PRODUCT WARRANTY

# 10

Para Systems Inc. (Para Systems) warrants this equipment, when properly applied and operated within specified conditions, against faulty materials or workmanship for a period of three years from the date of purchase. For equipment sites within the United States and Canada, this warranty covers repair or replacement of defective equipment at the discretion of Para Systems. Repair will be from the nearest authorized service center. Replacement parts and warranty labor will be borne by Para Systems. For equipment located outside of the United States and Canada, Para Systems only covers faulty parts. Para Systems products repaired or replaced pursuant to this warranty shall be warranted for the unexpired portion of the warranty applying to the original product. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

The warranty shall be void if (a) the equipment is damaged by the customer, is improperly used, is subjected to an adverse operating environment, or is operated outside the limits of its electrical specifications; (b) the equipment is repaired or modified by anyone other than Para Systems or Para Systems-approved personnel; or (c) has been used in a manner contrary to the product's User's Manual or other written instructions.

Any technical advice furnished before or after delivery in regard to use or application of Para Systems's equipment is furnished without charge and on the basis that it represents Para Systems's best judgment under the circumstances, but it is used at the recipient's sole risk.

EXCEPT AS PROVIDED HEREIN, PARA SYSTEMS MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation of implied warranties; therefore, the aforesaid limitation(s) may not apply to the purchaser.

## LIMITED PRODUCT WARRANTY

(Continued)

English

EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL PARA SYSTEMS BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Specifically, Para Systems is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, cost of substitutes, claims by third parties, or otherwise. The sole and exclusive remedy for breach of any warranty, expressed or implied, concerning Para Systems's products and the only obligation of Para Systems hereunder, shall be the repair or replacement of defective equipment, components, or parts; or, at Para Systems's option, refund of the purchase price or substitution with an equivalent replacement product. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Longer term and F.O.B. job site warranties are available at extra cost. Contact Para Systems (1-972-446-7363) for details.

## DECLARATION OF CONFORMITY

Application of Council Directive(s): 89/336/EEC, 73/23/EEC

Standard(s) to which Conformity is declared: EN50091-1-1, EN50091-2

Manufacturer's Name: Para Systems, Inc. (MINUTEMAN UPS)  
Manufacturer's Address: 1455 LeMay Drive  
Carrollton, Texas 75007 USA

Type of Equipment: Uninterruptible Power Supplies (UPS)  
Model No: PRO500E (Y), PRO700E (Y), PRO1100E (Y), PRO1500E (Y)

Year of Manufacture: Beginning April 30, 2003

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s).

Robert Calhoun  
(Name)

*Robert Calhoun*  
(Signature)

Manager Engineering  
(Position)

Date: April 30, 2003

Place: Carrollton, Texas, USA

**Notes:**

English

**Rackmount Solutions, Ltd.**

915 S. Jupiter Road

Garland, TX 75042

[www.rackmountsolutions.net](http://www.rackmountsolutions.net)

[sales@rackmountsolutions.net](mailto:sales@rackmountsolutions.net)

1-866-207-6631 | Fax 972-276-6484

GSA Contract # GS-35F-0208R for IT 70

Approved vendor on ITSS (IT Solutions Acquisitions System)